2018 REPORT TO MONITORING COMMITTEE

FOR THE

ENVIRONMENTAL SURVEYING AND MONITORING PROGRAMME

OF THE

WILD ATLANTIC WAY OPERATIONAL PROGRAMME 2015-2019

for: Fáilte Ireland

88-95 Amiens Street

Dublin 1



by: CAAS Ltd.

1st Floor

24-26 Ormond Quay Upper

Dublin 7



Section 1 Background and Introduction

1.1 Background

The WAW is a branding exercise that unifies a series of existing and long-established touring routes along existing roads, viewing points and lay-bys. These predominantly seasonal activities have evolved over many years and now co-exist with a wide range of other year-round uses including farming, forestry and uses associated with settlement. Tourism and its promotion are long established activities in Ireland.

The WAW brand has been developing and gaining momentum since its inception; it is now an internationally recognised attraction for the west coast of Ireland. The WAW consists of 186 discovery points along the selected route. These sit within the brand hierarchy which is separated into regions, and within these regions there are lower level strategies and plans emerging; such as Visitor Experience Development Plans and Loop Drives. The development of these plans/strategies are informed by the visitor monitoring program.

The monitoring program has now been running for 4 years and data has been gathered on site usage for over 20,000 visitors and their effects/impacts1 on the receiving environment. Each year 15 sites are selected following a detailed rational with Dursey Sound being surveyed every year to assess annual variation at a site level. In 2015 the Signature Discovery Points were surveyed; these are the 15 flagship sites that were selected as the most influential sites along the WAW route. For the 2018 monitoring these sites were revisited so as T_1/T_2 comparisons can be made. This will help to identify if there have been any changed to the site usage/visitor movement patterns on the site and/or effects observed. Further details into the environmental monitoring programme can be found below.

This information is being disseminated to relevant authorities, landowners and stakeholders to promote responsible site management and sustainable tourism. It is acknowledged, however, that the WAW itself constitutes a concerted promotional effort with the intention of sustainably growing revenue from tourism within the Atlantic coastal counties of Ireland.

1.2 Introduction

This is the fourth report to the Monitoring Committe which includes the results of the Environmental Surveying and Monitoring Programme. This suite of reports includes:

- The macro monitoring results;
- The visitor observation study results; and
- The ecological study of visitor movement areas.

These assessments have been undertaken as part of the obligations set out in the SEA and AA reports of the Wild Atlantic Way (WAW) operational program. The data collected aims to characterise the interaction between tourism and key environmental metrics along the WAW. This includes characterisation of typical activities and effects from individual tourists (visitor observation survey) to a broader scale such as waste water management (Macro-Monitoring report).

These assessments are undertaken annually, and the scope of works being undertaken is reviewed by the environmental working group which meets twice a year to discuss the monitoring program. The working group consists of stakeholders such as local authority representatives as well as representatives from agencies such as the EPA and NPWS.

¹ This classification system is specific to the visitor monitoring programme and any reference to effects or impacts within this report does not relate to similar terms within the Habitats Directive but to general activities and associated environmental effects as detailed in Appendix III of the Visitor monitoring report.

The monitoring is intended to be a high level snap shot of the existing condition of sites along the WAW to inform the strategic planning of the WAW.

Fáilte Ireland is committed to presenting the results of WAW monitoring activities to a Monitoring Group twice each year.

- The objective of the Monitoring Groups is to ensure that that robust systems are in place, in appropriate existing authorities, to ensure that all key commitments made at the programme level will be delivered effectively (including at the appropriate time), and to ensure that no adverse effects on the integrity of the environment.
- The 8th meeting will be a chance to review the results gathered from the fourth year of monitoring. This will allow the identification of areas where the 2018 monitoring highlights any pressures to the environment.
- This information can then be used by relevant members of the Working Group to identify protective, remedial or improvement actions within their own areas of responsibility during the following year.
- The 9th meeting, in Q1 of the following year and in advance of the tourist season commencing, will be to approve the proposed next annual monitoring programme. The purpose of the meeting will be to ensure that monitoring is addressing areas of concern using methods and personnel that are appropriate. A secondary purpose would be to review progress made in addressing concerns raised by previous monitoring in order to amend monitoring accordingly.

An annual summary of the results of monitoring will be publicly available on the Fáilte Ireland website.

1.3 Environmental Surveying and Monitoring Programme

To address the issue of ensuring that sustainably growing revenue from tourism within the Atlantic coastal counties of Ireland, without compromising the receiving environment, a surveying, monitoring and reporting strategy has been commenced to identify and assess environmental impacts of visitors at sites along the WAW.

The purpose of the monitoring strategy is to:

- Ensure that the effects of the implementation of the Operational Programme are understood and acted upon;
- To ensure that there will be no delays in identifying existing or emerging activities that could threaten the environment; and
- To ensure that any remedial actions or recommendations undertaken because of this monitoring report are in compliance with the Habitats Directive.

The Environmental Surveying and Monitoring of the WAW is intended to describe the existing conditions of sites with a view to:

- Contributing to Visitor Management Strategies;
- Contributing to future editions of Fáilte Ireland's WAW Operational Programmes and Guidelines;
- Identifying remedial action/works required:
- Assessing the capacity for future loadings; and
- Integrating site management with future European site Management Plans.

There are three separate components to the Monitoring Strategy:

1. The **Macro Monitoring** examines the state of the environment at gateway settlements on the Wild Atlantic Way looking at large scale regional and national indicators to help develop baseline data.

- 2. The **Visitor Observation Monitoring** (this report) forms the second stage, examining the types, spatial patterns and intensity of existing visitor activities at 15 Discovery Points. The site selection process varies each year and is informed by the members of the WAW Monitoring.
- 3. The **Ecological Surveys** are informed by the Visitor Monitoring results and examine the areas receiving maximum, moderate, minimum and no loading. A focus is placed on floras species, habitat features and overall system functionality. Regard is given to specific conservation objectives of relevant European sites.

1.4 Outline of Summary Reporting

This summary will provide the following information:

Summary Report on Strand One Monitoring - using Existing Datasets

Strand One of the monitoring concentrates on long-established, high quality, official baselines that measure inter alia the seasonal variances in environmental loading caused by visitors - such as water quality, road traffic, Blue Flag Beach conditions and Green Coast Awards.

Summary Report on Strand Two Monitoring - Visitor Observation Survey

Strand Two of the monitoring concentrates on the examination of patterns of visitor behaviour at sites along the WAW. The aim of the Visitor Observation Survey is to collect evidence of stay duration, activities undertaken, location and direction of excursions from vehicles.

Summary Report on Strand Three Monitoring - Ecological Survey

Strand Three of the monitoring concentrates on the collection of ecological evidence, the evidence collected identifies core and secondary movement areas trafficked by users. This informs and guides the collection of ecological evidence. The zones identified during the Visitor Observation Survey provides evidence about where to examine evidence for the location, number, shape and extent of detailed ecological surveys to provide quantitative evidence of effects that can be compared to unaffected similar 'control' sites elsewhere.

Section 2 Summary Report on Strand 1- Macro Monitoring using Existing Dataset

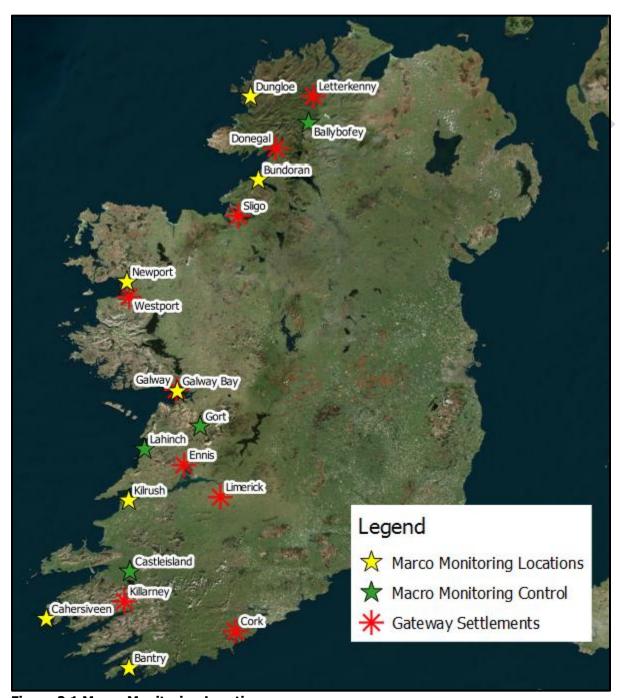


Figure 2.1 Macro Monitoring Locations

2.1 Background

Strand One of the monitoring strategy concentrates at nine long-established, high quality, official baselines at seven locations. These measures *inter alia* the seasonal variances in environmental loading caused by visitors - such as water quality, road traffic, Blue Flag Beach conditions and Green Coast Awards.

The use of existing, robust datasets will be annually assessed to identify any emerging trends and changes in a small number of key diagnostic environmental performance indicators. These macro-indicators provide a very high level of coordination for the cumulative impact assessment of other activities. Strategic Environmental Assessment of these plans and policies – at county, regional and sectoral levels utilise the same indicators. This also facilities the isolation of the contribution of tourism though in-combination effects.

The monitoring focuses on intra-urban settlements between gateway towns along the WAW. Gateways such as Cork and Galway that capture the infiltration of visitors. These also supply the high-level 'input' data for the monitoring before they become dissipated among many smaller destinations and intra-urban settlements. The purpose of macro monitoring is to identify the state of the environment between the gateway settlements because these intra-urban settlements, such as Bundoran in Co. Donegal, often accommodate and entertain the bulk of overnight visitors. There are 7 monitoring sites and 4 control sites selected to for the purpose of the macro monitoring. Each site is located in the counties situated along the WAW, the 7 sites are:

- Dungloe;
- Bundoran;
- Newport;
- · Galway Bay;
- Kilrush;
- · Bantry; and
- Cahersiveen.

The 4 control points are:

- Ballybofey;
- Gort:
- Castleisland; and
- Lahinch.

This strategy facilitates the direct identification and assessment, at a high level, of the effects that visitor numbers have on key environmental indicators. These use long-established baselines (from agencies such as the National Roads Authority, Environmental Protection Agency, Department of Environment, Community and Local Government, Department of Arts, Heritage and the Gaeltacht, etc.).

2.2 Conclusions and Reccomendations

The macro monitoring element of the *Environmental Surveying and Monitoring for the WAW Operational Programme*, as discussed in this document concentrates on long-established, high quality, official baselines. These official baselines were adopted for this monitoring survey in order to represent a number of key performance indicators, the intended use of which being to identify trends and changes in the state of the environment along the WAW.

The key performance indicators, as described in detailed in Table 1.1 of this document, were applied to six monitoring points and a further four control sites inland from the route in order to provide an insight into the state of the environment along the WAW during the year 2017 or where information for 2018 is available this is referenced. The results of these macro monitoring activities will be collated and presented to a Monitoring Group along with results of all other WAW monitoring activities.

The Strategy for Environmental Surveying and Monitoring is an evolving tool that will be informed and updated by emerging findings. Presentation of all monitoring results should thus be presented to the Monitoring Group once a year hereafter. This information can be used by relevant members of the Monitoring Group to identify protective, remedial or improvement actions within their own areas of responsibility during the following year. An annual summary of the results of monitoring will be published on the Fáilte Ireland website at the end of each monitoring year.

Table 2.1 Overall Summary of Sites between 2015-2017

Site	Indicator 1 (WWTP)	Indicator 1	Indicator 2	Indicator 3	Indicator 4	Indicator 5	Indicator 6	Indicator 7
Dungloe	2017-Non- Complaint 2015-2016- Complaint	Good Water Status and Excellent Bathing water status 2015- 2017	Increase in interval traffic during summer months across all 3 years, likely due to tourists travelling to WAW Sites	Awarded Blue flag beach status 2015- 2018.	Dooey beach 13km from Dungloe received the award in 2018.	Terrestrial mammals were the highest recorded species group.	2016 saw the highest number of visitors to the Border Region with 1,815,000 in total from across all locations. This was a 23% rise in numbers from 2015 and a 2.3% drop in numbers in 2017 with a total of 1,755,000.	No planning refusals in Dungloe, 4 tourism related planning refusal in the county
Bundoran	No WWTP in 2015- 2016 Non- Complaint in 2017 New WWTP opened in 2018	Good water status and Excellent bathing water status 2015-2017	Increase in interval traffic during summer months across all 3 years, likely due to tourists travelling to WAW Sites	Bundoran received blue flag status during 2015 - 2018monitoring.	Bundoran did not receive any award for Green Coasts between 2015 and 2017.	Flowering Plants were the highest recorded species	2016 saw the highest number of visitors to the Border Region with 1,815,000 in total from across all locations. This was a 23% rise in numbers from 2015 and a 2.3% drop in numbers in 2017 with a total of 1,755,000.	No planning refusals in Bundoran, 4 tourism related planning refusal in the county
Newport	Non-Compliant in 2017	Good water status and Excellent bathing water status 2015-2017	Increase in interval traffic during summer months across all 3 years, likely due to tourists travelling to WAW Sites	Newport did not receive Blue Flag status between 2015 and 2018	Newport did not receive any award for Green Coasts between 2015 and 2017.	Flowering plants and terrestrial mammal were the highest recorded species at the Newport monitoring site.	2015 brought the lowest number of visitors to the West region with a total of 3,072,000 overall. There has been a rise of 15% since 2015 with 3,267,000 visitors overall in 2016 and 3,534,000 in 2017.	No planning refusals in Newport, 4 tourism related planning refusals in the county.

Site	Indicator 1 (WWTP)	Indicator 1	Indicator 2	Indicator 3	Indicator 4	Indicator 5	Indicator 6	Indicator 7
Galway Bay	Complaint in 2015, 2016 and 2017.	Good water status in Galway bay between 2015-2017. Bathing water quality in Ballyloughane was poor in 2015 and 2017.	A rise in weekday traffic during June 2017 may be as a result of visitors to the area for a popular triathlon. No data for December 2017 due to road closures.	Salthill & Silverstrand received blue flag status between 2015-2018.	Both Salthill & Silverstrand have retained their green coast award since 2015.	Terrestrial mammals were the highest recorded species at the Galway bay monitoring site.	2015 brought the lowest number of visitors to the West region with a total of 3,072,000 overall. There has been a rise of 15% since 2015 with 3,267,000 visitors overall in 2016 and 3,534,000 in 2017.	No planning refusals for Galway Bay, 3 tourism related planning refusals within the county.
Kilrush	No Monitoring carried out during 2015,2016,2017.	Good water status in Kilrush between 2015-2017. Bathing water quality at Cappagh pier was excellent between 2015-2017.	Both weekday and weekend traffic has reduced in 2017. This may be contributed to the weather conditions seen in Ireland throughout October	Cappagh Pier retained its Blue Flag status from 2015-2018	Kilrush did not receive any award for Green coast between 2015-2017.	Flowering plants were the highest recorded species at the Kilrush monitoring site.	The Mid-West Region saw the highest number of visitors during 2017 with 3,089,000 tourists across all locations. 2,038,000 was the lowest count of visitors in 2015. This shows a rise of 1,051,000 visitors to the Mid-West since 2015.	There were no Tourism related Planning refusals in Kilrush or County Clare during 2017

Site	Indicator 1 (WWTP)	Indicator 1	Indicator 2	Indicator 3	Indicator 4	Indicator 5	Indicator 6	Indicator 7
Cahersiveen	Compliant in 2015, 2016, 2017.	Cahersiveen water quality has been classed as good since 2015. The Waste Water Treatment Plant has been complaint with Emission Limit Values. The bathing water quality has been excellent since 2015.	Steady increase in interval traffic volumes during weekends and weekdays since 2015. The surge is likely due to the increase of tourists travelling from WAW sites, mainly during summer months.	Whitestrand has retained its Blue Flag status since 2015.	There has been no change in status of the Green coast award.	Flowering Plants were the highest recorded species at the Cahersiveen monitoring site.	Overall the South-West region received the highest level of tourism in 2017 with 4,446,000. 2015 had the lowest record of tourists at 3,850,000. This is a growth of 2.3% between 2015 and 2017.	There were no tourism related planning refusals in Cahersiveen during 2017, there were 3 refusals within the county
Bantry	Complaint in 2015, 2016, 2017.	Bantry's Water Quality has maintained Good Status since 2015. The Waste Water Treatment Plant has been in compliance with emission limit values. Bathing Water Quality at Barley Cove has	Steady increase in interval traffic volumes during weekends and weekdays since 2015. The surge is likely due to the increase of tourists travelling from WAW sites, mainly during summer months.	Barley Cove retained its blue flag status between 2015 and 2018.	Dooneen Pier has received the Green Coast Award since 2015	Flowering Plants were the highest recorded species at the Bantry monitoring site.	Overall the South-West region received the highest level of tourism in 2017 with 4,446,000. 2015 had the lowest record of tourists at 3,850,000. This is a growth of 2.3% between 2015 and 2017	There were no tourism related planning refusals in Bantry during 2017, there were 3 refusals within the county during this time.

Site	Indicator 1 (WWTP)	Indicator 1	Indicator 2	Indicator 3	Indicator 4	Indicator 5	Indicator 6	Indicator 7
		been Excellent since 2015						
Ballybofey	Complaint in 2015 Non- Compliant in 2016,2017.	Ballybofey's Water Quality has been classed as good since 2015. There is no bathing water monitoring point for Ballybofey resulting in no data being available.	There was little change in the level of interval traffic at Ballybofey between 2015 and 2017. Any rise in numbers throughout summer months could be contributed to tourists travelling to the WAW.	It is noted that Ballybofey is an inland monitoring site and therefore will not have any blue flag status	It is noted that Ballybofey is an inland monitoring site and therefore will not eligible to apply for a Green Coast Award	Flowering Plants and Terrestrial Mammals were the highest recorded species at the Ballybofey monitoring site	2016 saw the highest number of visitors to the Border Region with 1,815,000 in total from across all locations. This was a 23% rise in numbers from 2015 and a 2.3% drop in numbers in 2017 with a total of 1,755,000.	There were no Tourism related planning refusals in Ballybofey during 2017, there was 4 tourism related planning refusals within the county during this time
Gort	Non-Complaint in 2015, 2016 and 2017.	Water Quality in Gort has been classed as poor. The Waste Water Treatment plant has been noncompliant with Emission Limit Values since 2015. Gort is aiming to get to Good Status by 2021.	There was a sharp fall in numbers between November and December is a result of road works taking place between 22/11/2017 and 10/12/2017, road closures were in place between these dates so no data was collected.	It is noted that Gort is an inland monitoring site and therefore will not have any blue flag status.	As Gort is an inland monitoring site and therefore will not eligible to apply for a Green Coast Award	Flowering Plants were the highest recorded species at the Gort monitoring site	2015 brought the lowest number of visitors to the West region with a total of 3,072,000 overall. There has been a rise of 15% since 2015 with 3,267,000 visitors overall in 2016 and 3,534,000 in 2017.	There were no Tourism related planning refusals in Gort during 2017, there was 3 tourism related planning refusals within the county during this time
Castleisland	Complaint in 2015 and 2017. Non- Complaint in 2016	Castleisland's Water Quality has been classed as good since 2015. The Waste Water Treatment Plant has been compliant with	Interval traffic at Castleisland remained at a steady level between 2015 and 2017. A peak in number during the summer months could be	It is noted that Castleisland is an inland monitoring site and therefore will not have any blue flag status.	As Castleisland is an inland monitoring site and therefore will not eligible to apply for a Green Coast Award	Flowering Plants were the highest species at the Castleisland monitoring site	Overall the South-West region received the highest level of tourism in 2017 with 4,446,000. 2015 had the lowest record of tourists	There were no Tourism related planning refusals in Castleisland during 2017, there was 3 tourism related planning

Site	Indicator 1 (WWTP)	Indicator 1	Indicator 2	Indicator 3	Indicator 4	Indicator 5	Indicator 6	Indicator 7
		emission limit values. There is no bathing water monitoring point for Castleisland resulting in no data being gathered.	contributed towards tourists travelling to the WAW.				at 3,850,000. This is a growth of 2.3% between 2015 and 2017.	refusals within the county during this time
Lahinch	Non-Complaint in 2015, 2016, and 2017.	Lahinch has had Good water status since 2015. Bathing water quality has been excellent	A rise in traffic in August 2016 may be a result of the fight for climate change event held at Lahinch.	Lahinch has received the international blue flag beach award every year since 2015.	Lahinch has not been awarded with a Green Coast award between 2015-2017	Mollusc were the highest species at the Lahinch monitoring site	The Mid-West Region saw the highest number of visitors during 2017 with 3,089,000 tourists across all locations. 2,038,000 was the lowest count of visitors in 2015. This shows a rise of 1,051,000 visitors to the Mid-West since 2015.	There were no Tourism related Planning refusals in Lahinch or County Clare during 2017

Section 3 Summary on Strand Two Monitoring- Visitor Observation Survey

Strand Two of the monitoring concentrates on the examination of patterns of visitor behaviour at sites along the WAW. Below is a summary of results collected, details are fully presented in the Visitor Observation Report. The aim of the Visitor Observation Survey was to collect evidence of stay duration, activities undertaken, location and direction of excursions from vehicles.

Effective methods for visitor observation have been designed and tested using Pilot Visitor Observation Studies at the Burren and Cliffs of Moher Geopark in Co. Clare. The studies were carried out at full spectrum of types of circumstances that range from small spatially-concentrated areas to large diffuse sites. The study sites had a range of existing management regimes that range from those that are complex and highly structured, private enterprises to the simpler smaller sites.

The method is designed to have a simple, replicable template that allows easy identification patterns of visitor activity, movement and behaviour using a standardised visitor observation and tracking methodology for a range of site types. The collation of the data including the tracking of onsite movement by visitors result in the identification of core and secondary movement zones. The Discovery Points and Control Sites represent the following habitats/landscape types:

- 1. Rocky shores;
- 2. Soft shores/beaches/dunes;
- 3. Montane/upland/peat;
- 4. Marine areas (sea, estuaries, salt marsh); and
- 5. Improved Grasslands (farm land).

The fourth round of monitoring focuses on the 14^2 candidate Signature Discovery Points previously monitored during the 2015 surveys, to observe any trends that may have emerged. The monitoring targeted the conservation objectives of European sites, to facilitate monitoring, identification and highlighting of effects arising from the WAW on its own and in combination with other plans and projects, taking existing uses, pressures and loadings into account.

A list of general activities and effects was developed to assist in the categorisation of visitor behaviour (See Appendix III of the visitor observation report). While these are generic to all sites, the list is non-exhaustive and was expanded depending on the individual site or emerging trends. Activities and effects were categorised depending on their severity to guide accurate reporting in an effective, efficient and easily replicated manner.

^{2 2} Note that in 2015 the site referred to as Derrigimlagh Signature Discovery Point was monitored, however on review it has been discovered that this site is not the Derrighimalagh Discovery Point but a site further west at Alcock and Browne memorial. As a result, 14 signature discovery points are presented in this report. Derrigimlagh Signature Discovery Point will be monitored in 2019.

3.1 Results and Analysis for all Sites

3.2 General Analysis of sites

- Of the 10,472 visitors observed during the 2018 survey;
- 81% were reported to take part in low level activitieson sites;
- 17% were reported to take part in medium level activitieson sites;
- Less than 1% of all visitors were recorded to take part in high level activites onany of the sites;
- Cars where the most common mode of transport recorded across all sites during the survey;
- The Core zones were recorded to receive the most visitor traffic (78.8% of all movement recorded)
- The average duration recorded across all sites was 00:46:00.

3.3 Site Based Evidence

- Mizen Head (95%), Blasket View (98%), Bray Head (98%) recorded no identifiable effects, these
 four sites are examples of good site management which in turn results to visitors having minimum
 environmentaleffects to a site;
- On analysis, it was noted that the longer visitors spent on site, the likelihood of environmental effects increased:
- 81.4% effects recorded on site were low i.e. walking on marked paths, resting, reading, photographing and sightseeing;
- A further 17.5% of all activities observed were medium level primarily caused by visitors leaving an existing marked trial or path;
- Of the 4571 environmental effects recorded, only 45 were determined to be high-level (less than 0.1%)
- 63.9% of visitor effects were recorded to have no environmental effect to the sites; and
- Since the 2015 survey there has been a rise in the number of visitors bringing drones to the sites (from none in 2015 to 8 recorded in 2018).

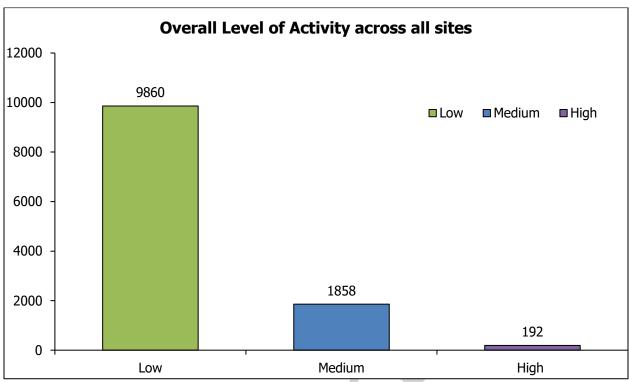


Figure 3.1 Overall Level of Activity recorded across all Sites

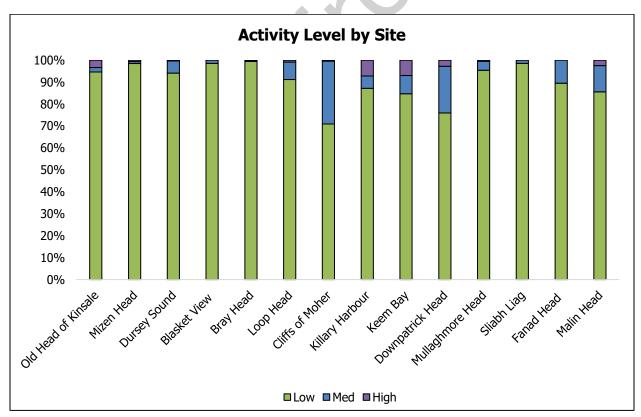


Figure 3.2 Activity Level by Site

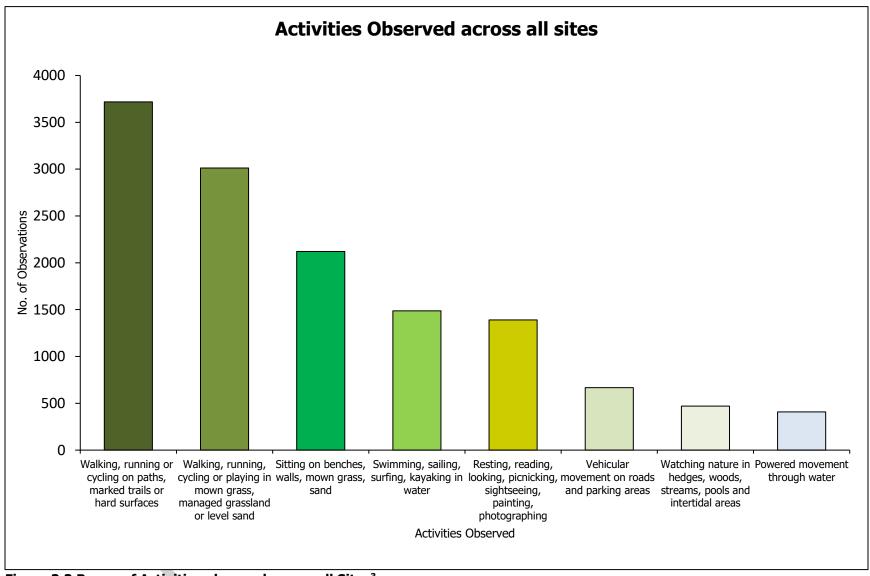


Figure 3.3 Range of Activities observed across all Sites³

³ Fishing, walking through wet/muddy soil, scrambling on steep or loose slopes, off road vehicular movement, Disturbance of wildlife, Deliberate building or moving or knocking site materials - parts of monuments, walls, stones, sand etc., Picking herbaceous vegetation; all these activities accounted for less than 1% of the overall total.

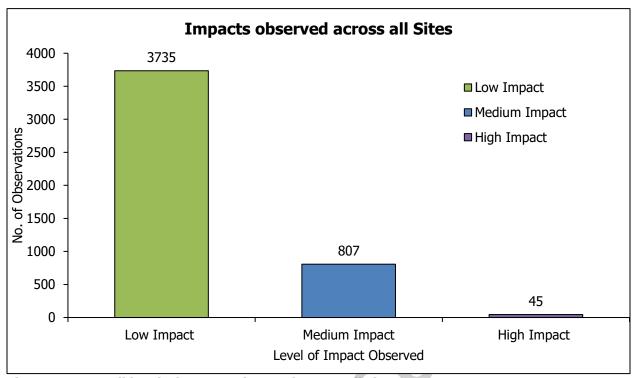


Figure 3.4 Overall level of Imapct observed across all sites

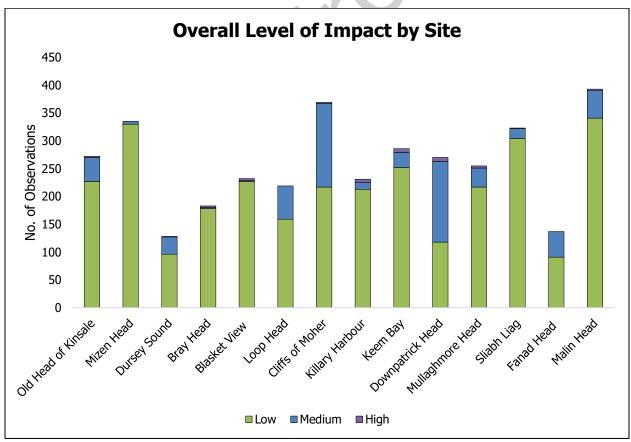


Figure 3.5 Level of Impact Observed across all sites

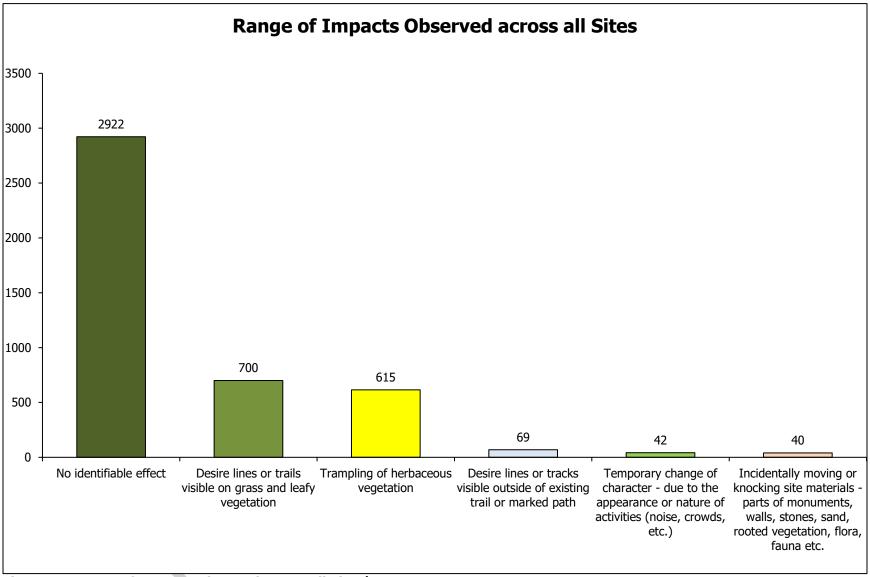


Figure 3.6 Range of Impacts Observed across all Sites⁴

⁴ Direct interference with site material - parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna etc, Removal of material - parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna etc, Vandalism or graffiti, Destruction of structures, vegetation or fauna, Heavy littering or dumping quantities of waste, Burning materials or lighting a fire, Injuring, killing or taking wildlife

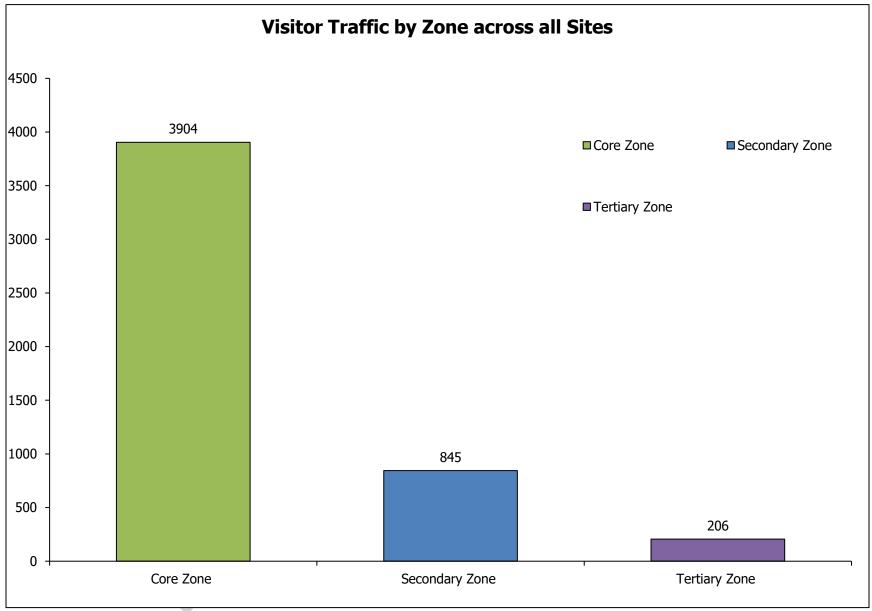


Figure 3.7 Zones Trafficked by visitors across all sites

3.4 Conlcusions, Reccommendations and Trends Observed

Table 3.1 Comparrsion of sites between 2015 and 2018

Site Name	County	Site Summary (2018)	Site Summary (2015)
Old Head of Kinsale	Cork	 70% - No identifiable environmental effect Good visitor management 12% - Medium level activity - leaving paved areas. 	 75% - No identifiable environmental effect 18% - Medium level activity - leaving paved areas
Mizen Head	Cork	 95% - No identifiable environmental effect 5% - Medium level activity 	 99% - No identifiable environmental effect 1% - High-level activities Good visitor management observed
Dursey Sound	Cork	 52% - No identifiable environmental effect 46% - Medium level activity- leaving desire lines 1% - High-level activities 	 65% - No identifiable environmental effect 29% - Medium level activity
Bray Head	Kerry	 98% - No identifiable environmental effect Good site management 1% high-level- child throwing stones from cliff edge 	98% - No identifiable environmental effect 1% - high-level activities - temporary disturbance- discarding cigarette butt
Radharc na Mblascaoidi (Blaskets View)	Kerry	Well managed site - 97% no identifiable environmental effects Core zone was trafficked 259 times Visitors aware of site sensitivities	 94% - No identifiable environmental effect 802 times- core zone was trafficked 28 times- secondary zone was trafficked
Loop Head	Clare	 80% - No identifiable environmental effect 12% - trampling herbaceous vegetation Zones trafficked by visitors - Core (211 times), Secondary (188 times) and Tertiary (4 times) 	 95% - No identifiable environmental effect 2% - High-level activities- Removal of material
Cliffs of Moher	Clare	 60% - Medium level activity 40% - No identifiable environmental effect Evidence of soil compaction, erosion and removal of vegetation through trampling Core Zone trafficked 740 times Tertiary Zone trafficked twice 	 26% - No identifiable environmental effect 74% - Medium level activity Areas with visitor management had best practice by visitors Evidence of deeply eroded desire lines
Killary Harbour	Galway	84% - No identifiable environmental effect 8% - Medium level activity Core zone trafficked 234 times, tertiary trafficked oncewater based activity	 86% - No identifiable environmental effect 9% - High-level activities Core zone trafficked 87 times Secondary zone trafficked 13 times
Keem Strand	Mayo	 89% - No identifiable environmental effect 9% - Medium level activity Core Zone received most movement (154 times) Tertiary Zone (74 times) - visitors using dunes to access beach 	 88% - No identifiable environmental effect 4% - Medium level activity 294 Times- Core zone trafficked 36 Times- Secondary Zones Trafficked
Downpatrick Head	Mayo	 55% - Medium level activity- trampling herbaceous vegetation, climbing church foundations 44% - No identifiable environmental effect to the site 1% high level activities- picking flowers at cliff edge. 	 81% - no identifiable environmental effect 2% - medium level activity-throwing stones into the sea 8% - High level activities - greyhound training
Mullaghmore Head	Sligo	 85% - No identifiable environmental effect 14% - Medium level activity- cars driving on long grass Core Zone trafficked 176 times 	 97% - No identifiable environmental effect Core trafficked 274 times Secondary trafficked 34 times

Site Name	County	Site Summary (2018)	Site Summary (2015)
		Secondary Zone trafficked 156 times	
Sliabh Liag (Slieve League)	Donegal	 95% - No identifiable environmental effects to the site 5% - Medium level activities - jumping over fences Core Zone movement (268) Secondary Zone movement (9) 	 94% - No identifiable environmental effect 4% - Medium level activities Core zone trafficked 189 times, Secondary zone trafficked 139 times Tertiary zone trafficked 33 times
Cionn Fhánada (Fanad Head)	Donegal	 59% - No identifiable environmental effect to the site 19% - recorded trampling herbaceous vegetation Core Zone trafficked 194 times; Secondary Zone trafficked 28 times 	 No Identifiable environmental effect on site Core zone was trafficked 173 times Secondary zone trafficked 100 times
Malin Head	Donegal	 71% - No identifiable environmental effect to the site 219 - Times core zone was trafficked 118 - Time Secondary Zones was trafficked 12% - Medium level activities at the site 	 75% - No identifiable environmental effect to the site 13% - Medium level activities at the site 182 - Times Core zone was trafficked 185 - Times Secondary zone was trafficked

3.4.1 Recommendations

Site management is recommended where visitors spend more than 15/20 minutes at one site. When considering the level of management warranted at a site several factors should be considered:

- site size and dispersal;
- Level of activity recorded; and
- Average duration of time spent at site.

All sites should be evaluated and developed to ensure the correct facilities are put in place to deal with the level of footfall each site receives. Interventions can include the removal of infrastructure and the management of visitor movements through a remote visitor centre with shuttle services provided. If sites are left without any intervention, environmental effects that are currently not causing significant impacts, may in the long-term cause effects to worsen. Visitor loadings and carrying capacities should be monitored regularly at any tourist destination. The following are some general suggestions for some of the signature discovery points for their future management:

- At sites with little or no signage, it is suggested to erect new signage at access points and car parks to make visitors aware of the sensitivities associated with the site (**Old Head of Kinsale**);
- Sites where visitors frequently take part in recreational activities could be facilitated by a warden
 during months in which sites have the highest visitor numbers to ensure activities don't have any
 adverse environmental effects to the site (Keem Strand);
- Any usage of drones at discovery sites should be managed correctly;
- Improve/review interpretive materials to inform visitors of any sensitive areas at all sites and how to behave in said areas;
- Information notices at sites with upland heathland systems should be erected to inform visitors of
 the highly sensitive nature of the habitats present and to be aware of sticking to marked trails and
 paths (Sliabh Liag, Malin Head and Loop Head).

Note: Where recommendations are executed by the relevant authority at site level as a result of this monitoring programme compliance with the EU Habitats Directive (Council Directive 92/43/EEC), associated national regulations and relevant planning and consent processes as will be required.

Section 4 Summary Report on Strand Three Monitoring- Ecological Survey

The aim of the ecological survey was too:

- Collect baseline ecological information on sites in order to inform an assessment of visitor impacts associated with the current level and pattern of use of each site.
- The data collected should prove useful as a baseline for any future ecological monitoring at the sites.

4.1 Study aims

The main aims of the ecological study included:

- Describe the existing ecological characteristics of areas at and in proximity to Signature Discover Points;
- Provide baseline ecological data against which future monitoring of potential visitor related impacts can be undertaken;
- Undertake a condition assessment of semi-natural habitats in those areas in proximity to each individual signature discovery point, and where degradation is recorded, elucidate on the likely causative factors taking into consideration the known visitor behaviour at each site;
- Determine, using evidence-based data, those sites where current use or future development of signature discovery points are / or could potentially lead to significant ecological effects on habitats / species of conservation concern. This determination will refer to habitats / species of conservation concern and areas designated for nature conservation (SAC / SPA / NHA);
- Make recommendations with regards the need for improved visitor management at sites based on the outcome of the study; and
- Make recommendations regarding the benefit of undertaking future ecological monitoring at individual sites.

Table 4.1 Wild Atalantic Way Signature Discovery Points surveyed as part of the study

Site Name	County	Grid Coordi	nates (ITM)
Old Head of Kinsale	Cork	51.619701	-8.542146
Mizen Head	Cork	51.451562	-9.8109117
Dursey Sound	Cork	51.607717	-10.158341
Bray Head	Kerry	51.891958	-10.396685
Radharc na Mblascaoidi (Blaskets View)	Kerry	52.104973	-10.455488
Loop Head	Clare	52.560901	-9.9304605
Cliffs of Moher	Clare	52.971639	-9.4260442
Killary Harbour	Galway	53.595759	-9.7645229
Keem Strand	Mayo	53.967177	-10.195409
Downpatrick Head	Mayo	54.322906	-9.3459186
Mullaghmore Head	Sligo	54.470555	-8.4630775
Sliabh Liag (Slieve Leauge)	Donegal	54.627438	-8.6847138
Cionn Fhánada (Fanad Head)	Donegal	55.275617	-7.6345941
Malin Head	Donegal	55.381018	-7.3738003

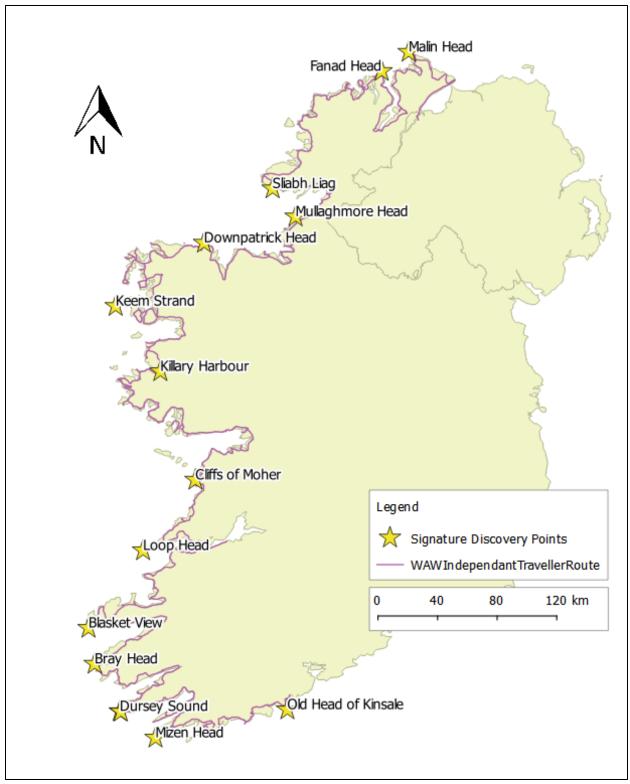


Figure 4.1 Discovery Points along the WAW surveyed during 2018

4.2 Methods

The methods followed during the ecological field survey were based on the standard approach to vegetation description and analysis by use of representative vegetation quadrats (or relevés). In all, 122 quadrats were recorded during the survey. The various parameters recorded at each quadrat location are described in below. In 2015 each of the 15 Signature Discovery Points were surveyed, and these sites were revisited during the 2018 surveys. A comparison of the outcome of these surveys is presented in this report. Dursey Sound is the control site and was revisited in 2018 after a similar visitor impact surveys were undertaken in 2015, 2016 and 2017. In 2015 and 2016 Dursey Sound was referred to as Garnish Point.

4.2.1 Quadrat Selection

A visitor behaviour survey undertaken during June and July 2018 examined the types, spatial patterns and intensity of existing visitor activities at and adjacent to each Discovery Point1. This work served to direct the ecologists to areas known to receive maximum (core movement areas), moderate (secondary movement areas), and minimum and no loading (control areas).

The locations of quadrats representative of each of these three categories were chosen based on the outcome of the visitor surveys prior to the commencement of ecology surveys.

4.2.2 Desktop Review

A desktop review of ecological datasets was undertaken with a view to determining known sensitive ecological receptors at each discovery point. This included a review of NPWS designated site datasets. Field maps were prepared which showed the location of each of the pre-assigned quadrat locations and designated site boundaries (where relevant).

4.2.3 Field Survey Methods

Quadrats of the different vegetation types on the site were recorded in a specially designed digital database (Survey 123 and ESRI Collector for ArcGIS) running on a GPS enabled field computer. The location of each of the quadrats was determined with the assistance of field maps and GIS software running on the GPS enabled field computer.

Once located, a wooden frame was laid down (orientated according to cardinal points) to indicate the extent of the quadrat (1m X 1m). All plant species within the quadrat were recorded and cover abundance value applied. The Domin scale of cover abundance was used during the study as follows:

- +: 1 individual, no measurable cover;
- 1: <4% cover, with few individuals;
- 2: <4% cover, with several individuals;
- 3: <4% cover, with many individuals;
- 4: 4-10% cover;
- 5: 11-25% cover;
- 6: 26-33% cover;
- 7: 34-50% cover;
- 8: 51-75% cover;
- 9: 76-90% cover; and
- 10: 91-100% cover.

A range of physical attributes were also recorded within each quadrat (e.g. slope, aspects, grazing impacts, soil type, soil/peat depth, cover and height values for different plant groups etc.).

4.2.4 Habitat Condition Assessment

An assessment of habitat condition was undertaken for each quadrat using a five-point scale from good to bad, as outlined below. The key criteria used when determining condition included; the presence (and abundance) or absence of indicator species, damage to vegetation (grazed, trampled, broken stems, etc.), erosion features, and presence and percentage cover of bare soil.

Table 4.2 Condition Assessment of Terrestrial Habitats

Ranking	Assessment	Description
1	Good	No evidence of any negative impact on habitats or other ecological
		features
2	Fair	Localised degree of negative impact, but slight and capable of rapid
		recovery
3	Doubtful	Widespread degree of negative impact, but slight and capable of rapid
		recovery
4	Poor	Localised negative impact, requiring intervention to allow full recovery
5	Bad	Widespread negative impact, requiring intervention to allow full recovery

4.2.5 Nomenclature

During the field survey, attention was paid to the possible occurrence of plant species which are rare in both a national and local context (Scannell and Synnott 1987) with emphasis on plant species listed in the Irish Red Data Book for vascular plants (Curtis and McGough 1988), the Flora Protection Order (2015), and Annex II of the E.U. Habitats Directive.

Plant species nomenclature in this report follows Rose (2004) for vascular plants, Atherton (2010) for mosses and liverworts, and Whelan (2011) for lichens. Moss species were mostly only keyed out to whether they belonged to the acrocarpous or pleurocarpous groups. Some mosses, liverworts, and higher plants not readily identified in the field were collected and keyed out later using appropriate keys.

4.2.6 Survey Limitations

The survey was constrained by trampled vegetation, and over grazing which led to difficulties in the identification of floral species in some instances. The surveys were carried out in July and August which is the optimum period however, some early flowering plants may not have been recorded. The GPS enabled field computer is accurate to within 5m.

4.3 Results

This section of the report presents the outcome of the survey on a site by site basis. The results of the survey in relation to each site is presented under the following headings: site description, ecological constraints, baseline ecology, assessment of visitor impact, and recommendations.

In all, 122 quadrats were recorded during the survey. Information gathered during the survey of quadrats informed the individual site reports presented in this section. The original data pertaining to each of the 122 quadrats is presented in Appendix I.

Summary results of the survey in relation to each Discovery Point are presented in below. Details that are presented include relevant designated sites, sensitive ecological features, impacts, and recommendations.

Of the fifteen sites surveyed, 14 of the sites occur within or directly adjacent to sites designated for nature conservation; Downpatrick Head did not have any overlapping or adjacent designations. All of the sites surveyed are coastal sites. The features of ecological importance are remarkably consistent throughout most sites comprising coastal habitats (principally sea cliffs, dry heath, and maritime grassland such as dry calcareous and neutral grasslands). Most of the discovery points are located within or nearby SPA sites designated for the protection of coastal sea birds, waterfowl, and waders.

No discernible effects were identified at eight of the sites:

- Mizen Head;
- Dursey Sound;
- Blasket View;
- Bray Head;
- Killary Harbour;
- Mullaghmore; and
- Cionn Fhánada (Fanad Head)

These sites were seen to have robust management practices in place which safe guard the ecological processes of the receiving environment; recommendations for these sites were advisory and minor/small in scale. Visitor management at these nine sites ensures that sensitive habitats in the surroundings are safeguarded from potential impacts. In addition, it is considered that visitor activities at these sites do not result in any significant adverse ecological impacts, due in part to the pattern of use by visitors, short duration of stay, or currently low visitor numbers.

Minimal and localised visitor impacts were observed at a further five sites surveyed in 2018. These included:

- Old Head of Kinsale;
- Loop Head;
- Cliffs of Moher;
- Keem Strand;
- Down Patrick Head; and
- Sliabh Liag

Recommendations have been made to further prevent impacts to ecological processes at these sites. It is noted that the impacts identified at these sites were recorded to be low and the recommendations made are minor suggestions to further minimise any potential effects. Further monitoring will facilitate an assessment of long-term pressures from annual visitor numbers to ensure they will not present future problems for the site.

Those sites which showed more significant visitor impacts, often as a result of visitor use of fragile heath areas for recreational activities such as walking, off road driving, and dog walking included:

Malin Head.

At this site, visitor impacts were noted on terrestrial habitats of ecological importance. These impacts are mainly associated with trampling of vegetation in areas regularly accessed by significant numbers of visitors. Such trampling may lead to exposure of bare soil/peat surfaces and thereby making the areas vulnerable to further erosion. The impacts are localised in nature and confined to the area being directly traversed. The impacted habitats are part of an upland mosaic cliff-top maritime grassland and / or heathland areas.

The key recommendations made during the current study relate to Improve visitor management / controls. In those sites where, ecological impacts have been recorded there is a requirement to improve visitor management. This can include (but not restricted to) such measures as:

- Drone usage at the sites should be restricted or managed appropriately
- Improved signage directing visitors away from sensitive areas, particularly in relation to sensitive habitat features and flora;
- Review or improve interpretation facilities informing visitors of the sensitivity of the area and appropriate behaviour / activities;
- Review of existing management facilities and access routes. Consideration should be given to
 controlling visitor movements on site. This could be achieved with the use of a moving pathway
 demarcated by an ankle high rope border. This would facilitate the dispersal of impacts and facilitate
 the recovery of impacted areas. Any on site works must comply with the WAW Site Maintenance
 Guidelines. Similarly, all works must be undertaken in compliance with the EU Habitats Directive
 (Council Directive 92/43/EEC) and all other relevant environmental legislation.;
- Restrict access where harm to the environment is unavoidable, this is particularly important for vehicle access in relation to some sites;
- Explore the potential for a part time warden at peak times to manage human conflicts with the receiving environment of discovery points; and
- An overall assessment of the site management practices is required to assess the steps and measures needed to reduce the harmful activities which currently are evident on site. All works to the site must comply with the WAW Site Maintenance Guidelines. Similarly, all works must be undertaken in compliance with the EU Habitats Directive (Council Directive 92/43/EEC) and all other relevant environmental legislation.

The choice of appropriate actions / measures will be site specific depending on the sensitivity and characteristics of the area.

• Ecological monitoring:

In those sites where visitor pressures on ecological features have been recorded then further ecological monitoring is suggested. In other instances where there is an absence of sensitive ecological features in proximity to the Discovery Point and / or where visitor management is appropriate to the current and future levels of activity then monitoring is not recommended. These recommendations take account of habitat features as well as flora and bird species and their sensitivities.

Table 4.3 Summary results of Viisitor Activities and Ecological Impacts at WAW signature discovey points undertaken in 2018

Discovery Point	Visitor Impacts	Ecological impacts identified ⁵	Recommendation(s)
Old Head of Kinsale	Low- High Level Activities	Localised Trampling of clifftop vegetation	Visitor movements are concentrated at key vantage points along the informal marked trails resulting in the removal of vegetation and exposed soil areas. Further damage should be avoided by controlling/ managing visitor access to the damaged areas.
			Any site maintenance works or improvements to facilitate the recovery of the clifftop vegetation should be carried out in compliance with Appendix V of the WAW Operational Programme (Site Maintenance Guidelines).
			These recommendations are consistent with the recommendations made in 2015 (Table 3.3) and show that the same issues exist at the site. Therefore, the upgrades to the site facilities have not reduced the impacts/effects observed on site.
Mizen Head	Low-Medium	Drone flight path	The site is well managed and visitor movements are restricted within the core movement area.
	Level Activities	directly over the protected habitat feature	Drone usage at the site was recorded; the drone was observed flying along the cliff face which imposes new threats to the special qualifying interest species of the Sheep's Head to Toe Head SPA. Drone usage at the site should be restricted or managed appropriately.
			The observations and recommendations are consistent with the 2015 results with the addition of the Drone recommendation.
Dursey Sound	Low-High Level Activities	Localised disturbance to breeding bird species and trampling	Visitors continue to have minor localised adverse impact at this site which relate to vegetation compaction, with trampling being present at key pinch point locations.
		of Annex Habitats	 As with previous year, provisions to minimise impacts from trampling should be explored such as: The erection of additional signage at the visitor parking area could provide guidance to visitors walking the trails behind the cable car station to stick to the paths provided and avoid unnecessary disturbance and/or trampling of dry heath and/or ground-nesting birds. Erection of temporary moving trails to disperse trampling across the site sequentially or fixed marking of walkways to ensure a unified area is sacrificed to preserve all surrounding habitat.
		8	Any current or future works to facility upgrades must be undertaken in compliance with the WAW Site Maintenance Guidelines. Where possible, spoil heaps and construction vehicles should be stored on hard surfaced areas to avoid impacts to the surrounding vegetation.
			Any increase in visitor numbers to the site should require a review of current road access from the main Allihies to Castletownbere road which is extremely narrow for larger vehicles such as camper vans and should consider road safety considerations and local residents.
			These recommendations are in line with those identified as part of the monitoring program from all previous years 2015 – 2017.

⁵ Key ecological impacts identified within this report in relation to habitat features, condition and flora species as well as impacts identified to bird species further detailed in Appendix II of this report.

Discovery Point	Visitor Impacts	Ecological impacts identified ⁵	Recommendation(s)
Bray Head	Low-High Level Activities	No Identifiable environmental effects	The signature discovery point is well managed and well maintained. The assessment focused on the receiving environment of the discovery point which showed visitors had no adverse effect on the ecological features of the site.
			These recommendations were consistent with those suggested in 2015.
Blasket View	Low-High Level Activities	No Identifiable environmental effects	The site is robust and well managed. This is consistent with the recommendations from 2015.
Loop Head Low-Medium Localised Tramplin		Localised Trampling of clifftop vegetation	The existing carpark is small and there is evidence of the surrounding habitat being used as unrestricted parking facilities. The site should explore options to reduce risk to the surrounding habitats such as the placement of rocks around the carpark boundary to reduce vehicular access but maintain the natural landscape character. Any on site works must be undertaken in compliance with the WAW Site Maintenance Guidelines to ensure no adverse effects to the environment occur as a result of any proposed works. Similarly, all works must be undertaken in compliance with the EU Habitats Directive (Council Directive 92/43/EEC) and all other relevant environmental legislation. There is evidence of soil/peat compaction along localised desire lines although the overall habitat condition is
			good. If visitor numbers were to increase the site could benefit from on site management of trails; such as the use of alternating trails marked with ankle high guidance ropes with minimal impact pegs inserted into the ground. These trails could be moved regularly to disperse the potential effects along the grassland areas to prevent exposing soil/peat along the marked trails. These recommendations build and expand on those proposed in 2015. Visitor effects at this site have increased
			since those recorded in 2015.
Cliffs of Moher	Low-High Level Activities	Localised Trampling of clifftop vegetation	The areas which are restricted from visitor movements have low species diversity. No rare or protected species or habitats were recorded on site. Visitor movements are causing erosion of soils and the removal of vegetation along the clifftop walks. However, there are no ecological features of significance which are being impacted by visitor movements. Consideration could be given to control/manage visitor movements to reduce erosion at the site, and potentially facilitate the rehabilitation of the grassland habitats.
		60	The management team has already restricted the use of drones on site and has erected signs in this regard. There were no activities recorded on site that introduce any potential effects to the bird species which nest on the sea stacks and cliff faces along the site. These recommendations are consistent with those suggested in 2015.
Killary Harbour	Low-High Level	No Identifiable	Visitor activities on site have no identifiable effect on the ecological features present; which is consistent with
,	Activities	environmental effects	the recommendations from 2015. It is noted that there is a considerable presence of Rhododendron which should be controlled to maintain the existing landscape character and limit potential effects to the aesthetic of the site.
Keem Strand	Low-High Level	Localised Trampling	None of the effects observed are recorded as having any long-lasting effect to the site. The site has a high
	Activities	of grassland vegetation	density of visitors, and there is some evidence of minor elements of erosion or heavy compaction where visitors access the upper cliff walks; this is consistent with the recommendations made in 2015.
			Consideration should be given to site management action such as the appointment of a seasonal warden to ensure litter at the site is controlled and/or camping or hiking activities on site are controlled.
Downpatrick Head	Low-High Level	Localised Trampling	The site consists of a carpark with desire line marked trails. Where visitor numbers are highest around the
	Activities	of clifftop vegetation	blowhole there is significant infrastructure for safety and to manage visitor impacts.

Discovery Point	Visitor Impacts	Ecological impacts identified ⁵	Recommendation(s)
			The grassland habitats on site are tolerant to disturbances and overall the habitat condition is favourable. However, the pressures associated with increased visitor numbers could cause damage to the site.
			Consideration should be given to controlling visitor movements on site. This could be achieved with the use of a moving pathway demarcated by an ankle high rope border. This would facilitate the dispersal of impacts and facilitate the recovery of impacted areas. Any on site works must comply with the WAW Site Maintenance Guidelines.
			These recommendations are consistent with those from 2015.
Mullaghmore Head	Low-High Level Activities	Localised Trampling of clifftop vegetation	Visitor movements across the clifftop create localised areas of compaction and impact to herbaceous vegetation. However, these paths are so clear that visitor movements have a high degree of trail fidelity. In addition, there were movements along the rocks at the base of the cliffs.
			Consider controlling visitor movements through education. Information signage could be erected to identify the importance of the habitat features and species present to inform the visitors of the sensitives present within the system. Species such as the Devils-Bit scabious (<i>Succisa pratensis</i>) and the 6-spot burnet moth (<i>Zygaena filipendulae</i>) could be highlighted.
			These recommendations are consistent with those suggested in 2015.
Sliabh Liag	Low-High Level Activities	Localised Trampling of clifftop vegetation and erosion directly adjacent to the built path	The site is well managed and the impacts observed were predominantly directly adjacent to the existing built walkways. Consideration should be given to the widening of the existing walkways to facilitate large groups. Overall the site management is robust and the habitat condition is favourable despite the presence of a few desire lines through the heath. This is consistent with the 2015 recommendations and shows an increase in the overall habitat condition present on site.
Cionn Fhánada (Fanad Head)	Low-Medium Level Activities	Localised Trampling of clifftop vegetation	The lighthouse is privately owned and is now open to tourists. Visitor activities on site had limited impact on the ecological features present. Consideration should be given to control/ manage visitor movements on site if visitor numbers increase. This recommendation is consistent with those suggested in 2015.
Malin Head	Low-Medium Level Activities	Evident damage to the protected habitat features and vegetation	There is clear evidence of damage occurring to the habitat features of the site as a direct result of visitor movements. Visitor movements are dispersed across the site and are currently not managed or controlled. There are clear evidence the existing car parking facilities are under capacity for the volumes of visitors the site receives daily. An overall assessment of the site management practices is required to assess the steps and measures needed to reduce the harmful activities which currently are evident on site. All works to the site must comply with the WAW Site Maintenance Guidelines.
		X	This site should be monitored closely and action should be taken if the current condition is not improved.
			These recommendations are consistent with those made in 2015. Since 2015 there have been improvements made to the site facilities with an extension to the carpark facilities and provision of toilet facilities. However, additional measures are still required as the effects are still present.